Species Tag:	18003	Species Name:	H2O
Version:	5		Water
Date:	Nov. 1999		
Contributor:	J. C. Pearson		
	H. M. Pickett		
Lines Listed:	3086	Q(300.0)=	178.115
Freq. (GHz) <	29800	Q(225.0)=	116.011
Max. J:	23	Q(150.0)=	63.680
LOGSTR0=	-26.7	Q(75.00)=	23.169
LOGSTR1=	-26.7	Q(37.50)=	8.580
Isotope Corr.:	0.0	Q(18.75)=	3.033
Egy. (cm^{-1}) >	0.0	Q(9.375)=	1.257
$\mu_a =$		A=	835840.3
$\mu_b =$	1.84718	B=	435351.7
$\mu_c =$		C=	278138.7

The data set used in this fit includes all the micorowave measurements reviewed in J. C. Pearson, T. Anderson, E. Herbst, F. C. De Lucia and P. Helminger, 1991, Astrophys J. **379**, L41, additional measurements were used from J. C. Pearson, 1995, Ph.D. Thesis Duke University, S. Belov, 1996, Private Communication, F. Matsushima, H. Odashima, T. Iwasaki, S. Tsunekawa, K. Takagi, 1995, J. Mol. Struct. **352-353**, 371, and P. Chen, J. C. Pearson, S. Matsuura, G. A. Blake and H. M. Pickett, 1999, Astrophys. J., In Press. FTIR rotational data was taken from J. Kauppinen, T. Karkkainen and E. Kyro, 1978, J. Mol. Spectrosc. **71**, 15, J. W. C. Johns, 1985, J. Opt. Soc. Am. **B2**, 1340, R. Paso and V. M. Hornman, 1995, J. Opt. Soc. Am. **B12**, 1813 and R. A. Toth, 1999, Private Communication, FTIR band transitions were taken from R. A. Toth, 1999, Private Communication and Energy Levels taken from R. A. Toth, 1998, J. Mol. Spectrosc. **190**, 379 and O. L. Polyansky, N. Zobov, S. Viti, J. Tennyson, P. Bernath and L. Wallace, 1997, J. Mol. Spectrosc. **186**, 422. All the data was forced into the fit and a reduced RMS of 1.9 was obtained for a combined fit of the ground and ν_2 data. This represents the ground state version only. It should be noted that there is minimal data at the highest J values. The quoted errors are expected to be about $1/2\sigma$. The fitting method is described in P. Chen *et al.*.

The intensities were calculated using the method in C. Camy-Peyret *et al.*, 1985, J. Mol. Spectrosc. **113**, 208. A value of 1.84718 Debye was used along with corrections for the planarity conditions. This agrees will with observed IR intensities up to $\Delta K_a = 3$ transitions. Higher order planarity terms are needed for agreement with $\Delta K_a = 5, 7, 9...$ transitions. The partition function includes the ν_2 state. Classical corrections for higher temperatures are given in P. Chen *et al.*.